

## CFFS POLYUREA-1 HD™ ALIPHATIC POLYUREA

### Product Description

CFFS Polyurea-1 HD is a single component, 90% solids, VOC Compliant, Aliphatic Polyurea that was developed for high gloss UV-stable floor topcoats. This coating provides reliable performance in a wide range of temperatures and climate conditions. Polyurea-1 HD has excellent resistance to UV rays, abrasion, and many of today's harshest chemicals.

### Product Features

- ❖ Displays excellent adhesion characteristics to a variety of substrates / coatings.
- ❖ Unlimited pot life increases the workability of the coating, providing consistent aggregate broadcasts and uniform topcoat applications.
- ❖ Will provide a glossy smooth finish when cured.
- ❖ Coating displays excellent chemical and abrasion resistance.
- ❖ Emits virtually no odors and can be applied indoors with minimal disturbance to surrounding activities.
- ❖ 100% UV-Stable Aliphatic Chemistry
- ❖ Versatile, crystal clear topcoat for use on both horizontal and vertical applications.
- ❖ Can be used for immersion and non-immersion service.
- ❖ Single component means no possible mixing errors, thus eliminating the human error factor.
- ❖ Extended cure time delivers great self-leveling properties and glass-smooth finishes.

### Primary Applications

- ❖ Heavy traffic areas
- ❖ Aircraft hangar floors
- ❖ Maintenance facilities
- ❖ Offshore platforms
- ❖ Industrial shop floors
- ❖ Commercial kitchens
- ❖ Bathrooms and Lavatories
- ❖ Chemical manufacturing plants
- ❖ Wastewater treatment applications
- ❖ Bar, table and countertop sealer

### Packaging

Product is sold CLEAR. Poly-1 HD is packaged in a 5 gallon bucket containing two, 1 gallon pouches and two stabilizer shots.

### Typical Physical Properties

Tensile Strength	ASTM D412	5,500
Compressive Strength (psi Mpa)	ASTM D695	12,000
Elongation	ASTM D412	75
Tear Strength (PLI)	ASTM 2240	800
Hardness, Shore D	ASTM D2240	84
Flexibility, 1/8" Mandrel	ASTM D1737	Pass
Falling Sand Abrasion Resistance	ASTM D968	30
<small>*Liters sand/ 1 dry mil</small>		
Abrasion Resistance	ASTM D4060	
CS-17 Wheel (1,000 gm Load)		34 mg Loss / 1000 cycles
Gloss	ASTMD-523 @60°	91+
Permeability		.038 WVT
VOC Content		<10 g/l
Impact Resistance		70 in/lbs Direct 60 in/lbs Indirect

### Typical Processing Properties

Single Component - 72°F (24°C) Tack Free-1-2 hours  
 Relativity Humidity - 54% Hard dry-3-6 hours  
 Recoat Minimum-4 hours / Recoat Maximum - 12 hours  
 Coverage: 1,600 square feet, per gallon, per mil.  
 Recommended Coverage

Topcoat Over Smooth Surface	400-700 sf/gal
Direct to Concrete	400-500 sf/gal

VOC compliant in all 50 states and Canada

### Adhesion Results

ASTM D-4541 Elcometer		
Concrete-no primer	concrete failure	>500psi
Concrete-primer	concrete failure	>550psi
Steel- primer	shear failure	>2000psi

### Temperature

40°F - 100°F (4°C - 38°C)  
 Optimal installation temperature is 65°F -80°F (18°C -27°C).  
 Extreme cold applications may slow the cure time.

## Surface Preparation

---

### **Concrete**

Sand blasting, diamond grinder w/30 grit or coarser or acid etching is required to remove the surface laitance that appeared during the curing process. This will also help to remove surface contaminants. Shot blasting is not suggested. Any oils or fats must be removed prior to product application. Do not apply to wet substrates. Chloride, moisture and pH levels should be checked prior to application. For new concrete, the concrete should be allowed to cure for a minimum of 30 days unless using a CFFS Ultra-Hydro Stop Primer. Prepared surface must achieve a profile of CSP-2 to CSP-3 as described under ICRI Technical Guideline No. 03732. CFFS Eco-Prime can be used to reduce outgassing of successive coatings.

### **Aluminum, Galvanized Steel, Non-Ferrous Metals**

All metals must be prepared to a near white surface that is equivalent to SSPC 10 or NACE 2. For immersion service, a 3 mil blast profile is recommended. A 2 mil profile is generally accepted. CFFS Poly100-SC Primer/Basecoat or CFFS Eco-Prime must be used prior to applying CFFS Polyurea-I HD.

### **Fiberglass**

The gel coat must be abraded to allow a mechanical bond of the coating. Sanding using 40-60 grit sandpaper is generally acceptable. Remove all latent dust and clean the surface to be coated using a solvent such as MEK. Allow minimum of 30 minutes prior to coating to allow MEK to completely flash off. CFFS Poly100-SC Primer/Basecoat should be used as the adhesive primer prior to applying Polyurea-I HD.

### **Wood**

Polyurea-I HD is not intended to be used direct to wood surfaces. Use a suitable wood primer or Polyurea 350 as a primer.

### **Existing Coatings**

Cured coatings (beyond their re-coat windows) must be abraded via scuff sanding with 80-120 grit sandpaper prior to the application of CFFS Polyurea-I HD. Wipe surface clean with a tack rag or similar after a thorough vacuuming to perform a final cleaning. **DO NOT USE SOLVENTS TO CLEAN THE FLOOR.**

### **Substrate Repairs**

All spalls and cracks should be chased out and repaired to ICRI standards using CFFS-Fortification Formula. Expansion joints should be honored. Horizontal saw-cut control joints can be filled with CFFS Polyflex-93. Contact CFFS for recommendations and available colors and finishes.

## Primer Requirements

---

Please consult your product supplier for job specific recommendations. In most cases the acceptable primers will be CFFS Polyurea-350, CFFS Poly100-SC, CFFS Eco-Prime, CFFS Ultra-Hydro Stop (or H2O) or CFFS Polycuramine.

## Installation Recommendations

---

Surfaces should be free of loose particles, rust, voids, and spalls. It is recommended that this product be applied multi-directional (north, south, east and west) to ensure proper coating thickness. **ALWAYS FOLLOW THE DEW POINT CHART AND APPLY ACCORDINGLY. DO NOT APPLY IN DIRECT SUNLIGHT OR WHEN TEMPERATURES ARE STEADILY RISING.**

## Application Information

---

### **Mixing**

Material should be pre-conditioned to a minimum of 50°F (10°C) prior to use. The material temperature must be brought to 5°F above the dew point temperature before opening and agitating the material to prevent condensation from entering the coating. Cut off the top of the flexible pouch above the zip lock seal. Open the pouch and add the entire contents of the stabilizer shot to the pouch. You can either Re-seal flexible pouch using the zip lock and seal and mix by massaging and shaking the flexible pouch for 2-3 minutes, or simply empty the contents of the pouch and stabilizer shot into a secondary container and mix for 1-2 minutes. Once mixed, the pouch material has a 6 month shelf life. **DO NOT POUR UNUSED MATERIAL BACK INTO THE ORIGINAL SHIPPING CONTAINER AS IT COULD CONTAMINATE THE ENTIRE BATCH.** Seal all containers immediately after pouring out desired quantities. It is important to limit the time the container is open. Mix and pour out only what is needed. At the end of the day apply a solvent "float" of approximately 5 ounces of MEK over the surface of the coating before resealing the container.

### **Roller**

Use only phenolic core, solvent resistant, natural or synthetic fiber roller covers. ¼" to 3/8" nap are acceptable, thicker nap may cause bubbling of the coating.

### **Brush**

Inexpensive natural fiber chip brushes are suggested – 2" to 4" width depending on the application. These will be one-time use items.

### **Thinner**

Non required

### **Clean Up**

Use ACETONE or MEK to clean tools, etc. before product cures.

## Application Conditions

---

### Shelf Life and Storage

Two (2) years in factory delivered unopened pouches. Once stabilized, six (6) months. Keep away from extreme heat, cold and moisture. Maintain at a proper storage temperature of 50-90° F. Keep out of direct sunlight and away from fire hazards.

### Repairs and Maintenance

Re-application of the product after 12 hours of initial application requires sanding and cleaning to achieve optimum adhesion. Contact CFFS for site specific recommendations. Do Not clean floor with solvents or solvent based cleaners. Contact CFFS for specific cleaner recommendations.

## Compatible Coatings

---

### Primers

CFFS Poly100-SC	(Single Component Aromatic Polyurea)
CFFS Ultra-Hydro Stop	(Epoxy MVT Primer)
CFFS Polyurea-350	(Polyurea)
CFFS Polycuramine	(Polycuramine)

### Intermediates

CFFS RG-80x	(Aliphatic Polyaspartic Polyurea)
CFFS Polyurea-350	(Polyurea)
CFFS Polucuramine	(Polycuramine)
CFFS Polyurea-I HD	(Single Component Aliphatic Polyurea)

### Clear Finish Topcoats

CFFS RG-80x	(Aliphatic Polyaspartic Polyurea)
CFFS PG-100	(Aliphatic Polyaspartic Polyurea)
CFFS Polyurea-I HD	(Single Component Aliphatic Polyurea)

## LEED Credits

---

Most CFFS products contribute to LEED Credits. See our LEED Credit Bulletin for more information.

## Certifications

---

VOC Compliant in all 50 states, Canada, Australia and Various Countries in Europe (National Standards – IMC)  
USDA and FDA certified food safe for incidental food contact.

## Shipping Information

---

Flash Point:	47°C (117°F)
Weight/Gallon:	9.7 ±1.0 lbs.
DOT HAZARD CLASS	N / A
DOT PACKAGING GROUP	II
DOT LABEL	N / A
DOT SHIPPING NAME	Paint Related Material
DOT PLACARD	N / A
UN / NA NUMBER	1263

## Safety Precautions

---

**DANGER!!** Vapor and Atomized liquids are harmful. Overexposure may cause lung damage, allergic skin reactions, or respiratory reactions. Effects may be permanent, may affect the brain or nervous system causing dizziness, headaches, or nausea. Use only in well ventilated areas, wear approved respirators when necessary. Keep out of reach of children. See MSDS for First Aid recommendations.

## Warranty

---

The technical data and any other printed information furnished by CFFS are true and accurate to the best of our knowledge. CFFS POLYUREA-I HD™ conforms to in house quality control procedures and should be considered free of defects. The data provided is believed to be reliable and is offered solely for evaluation. The use of this product is beyond the control of the seller, therefore the buyer assumes all risks of use and handling whether done in a matter that is in accordance with the provided posted directions or not. CFFS makes no warranty; expressed or implied, of its products and shall not be liable for indirect or consequential damage in any event.

## Chemical Resistance

Acetic Acid 100%	RC	Methanol	R	Sugar/H2O	R
Acetone	R	Methylene Chloride	C	Sulfuric Acid 10%	R
Ammonium Hydroxide 50%	RC	Mineral Spirits	R	Sulfuric Acid >50%	R
Benzene	RC	Motor Oil	R	Toluene	R
Brake Fluid	RC	MTBE	C	1, 1,1-Trichlorethane	C
Brine saturated H2O	R	Muriatic Acid 10%	R	Trisodium Phosphate	R
Chlorinated H2O	R	NaCl/H2O 10%	R	Vinegar/H2O 5%	R
Clorox (10%) H2O	R	Nitric Acid 20%	RC	H2O 14 days at 82° C	R
Diesel fuel	RC	Phosphoric Acid 10%	RC	Xylene	NR
Gasoline	R	Phosphoric Acid 50%	NR		
Gasoline/5% MTBE	R	Potassium Hydroxide 10%	R		
Gasoline/5% Methanol	R	Potassium Hydroxide 20%	R, Dis		
Hydrochloric Acid 20%	R	Propylene Carbonate	RC		
Hydrofluoric Acid 10%	RC	Skydrol	RC		
Hydraulic fluid (oil)	RC	Sodium Hydroxide 25%	R		
Isopropyl Alcohol	R	Sodium Hydroxide 50%	R, Dis		
Jet Fuel (JP-4)	R	Sodium Hypchlorite 10%	RC		
Lactic Acid	RC	Sodium Bicarbonate	R		
MEK	NR	Stearic Acid	R		

### Chemical Resistance Key

R=recommended/little or no visible damage  
 RC=recommended conditional/some effect, swelling or discoloration  
 C=Conditional/Cracking-wash within one hour of spillage to avoid affects  
 NR=Not recommended  
 Dis=Discolorative

\*\*Chemical Resistance Test Method followed ASTM D1308